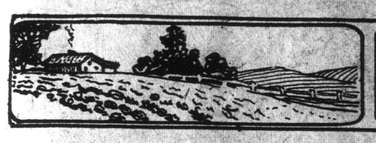


THE SIMPLE LIFE

COMMERCIAL FERTILIZERS: NITROGEN AND PHOSPHORIC ACID

In the scope of this article, we cannot discuss the composition and merits of all the ingredients that may be employed in the compounding of fertilizers. We shall, therefore, select a few of the more important in each class.

Nitrogen

This element is at once the most costly of forms of plant food supplied by fertilizers, the most important from the market-garden standpoint and the easiest lost from the soil. It is the element that above all produces leaf growth.

For our purpose nitrate of soda (Chili saltpetre) stands first. The commercial article as sold for fertilizer purposes contains between fifteen and sixteen per cent. of nitrogen. This material is soluble in water and presents its nitrogen in an immediately available form. Within a day or two after its application, its effect can be seen on the crop. Excess of nitrate, that is, the amount over and above that which is taken up by the growing crop within a short time, may be and probably will be lost by drainage into the sub-soil, below the reach of the roots. Hence, small and frequent applications made as a top dressing to the crop during the earlier weeks of growth are more economical than one large dose at the beginning of the season.

Sulphate of Ammonia

Sulphate of ammonia is another soluble nitrogen compound, though it does not yield its nitrogen to plant growth quite so readily as does nitrate of soda. It contains about twenty per cent. of nitrogen, and may be used as a source of nitrogen for market garden crops that have a somewhat long period of growth.

Dried Blood

Dried blood ranks next in importance in nitrogenous fertilizers. It contains from twelve to sixteen per cent. of nitrogen, according to quality. It decays rapidly in warm, moist soils and is probably the most effective of all the organic forms of nitrogen.

Fish waste, tankage, wool waste, and a number of other forms of organic nitrogen are used by fertilizer manufacturers. Many of them readily yield their nitrogen to crops, while others very slowly furnish their nitrogen as food and hence are more lasting. As these materials are not on the market here, we need not discuss their relative merits. The original guano, formed of dried and concentrated bird excrement, the accumulation of centuries on certain islands in the Pacific, is no longer available. It was a strong forcing manure.

Phosphoric Acid

Ground bone or bone meal has long been used and recognized as a valuable manure, particularly for mellow, moist soils. It will contain from twenty to twenty-four per cent. of phosphoric acid and two to four per cent. of nitrogen, so that with the addition of some potash compound, as wood ashes, or muriate of potash, a complete fertilizer can be prepared. The quality or value of a bone meal will depend largely on the method of its preparation; thus, steamed bone (that from which glue has been extracted) will be richer in phosphoric acid and poorer in nitrogen than raw bone.

Though bone meal does not contain its plant food in an immediately soluble, that is, available condition, its decay is fairly rapid in a warm, loose, moist soil. By the organic matter it contains, the soil is undoubtedly improved, and though not supplying food that can at once be absorbed by plants, bone meal may well well find a place among the fertilizers used by market gardeners and fruit growers, especially for crops that have a long season of growth and do not require forcing.

Superphosphate

Superphosphate is sometimes called acid phosphate. It results from the action of sulphuric acid (oil of vitriol) on bones and all kinds of mineral phosphates as found in various parts of the world. This treatment converts the greater part of the phosphoric acid of the insoluble phosphate into a form soluble in water and hence available to crops. Space will not allow us now to discuss fully the chemistry involved in this treatment of phosphates by acid, but there are several important points therein that are well worthy of the attention of those using fertilizers. It must suffice to say that superphosphates will ordinarily contain about fifteen per cent. of water-soluble phosphoric acid. There will be always present a certain small percentage of phosphoric acid, known as "reverted," which, while not immediately soluble in water, is a useful phosphatic manure. There may be also unattacked phosphate, owing to insufficiency of acid or other causes. All superphosphates necessarily contain gypsum or sulphate of lime as a result of the action on this mineral phosphate.

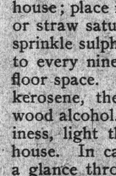
Superphosphate is the phosphatic manure to use when we wish to hasten maturity as well as for crops with a short season of growth and needing an immediate supply of soluble acid. From 300 to 400 pounds an acre is usually applied.

Basic Slag

Basic slag is another phosphatic manure now largely used. Its phosphoric acid is not soluble in water (though becoming available gradually to the soil), and therefore the fertilizer is perhaps better adapted to farm than market-garden crops. Nevertheless, it has been found particularly valuable for muck soils and soils that are sour and naturally deficient in lime and it is quite possible that market gardeners may be able to use it to advantage on such of those crops having a comparatively long season of growth. Good brands contain about seventeen per cent. of phosphoric acid. The usual application per acre is in the neighborhood of 500 pounds.—Frank T. Shutt, M.A., Chemist, Dominion Experimental Farms.

WITH THE POULTRYMAN

TO RID A HOUSE OF MITES



THE United States Department of Agriculture issues the following directions for ridding a henhouse of mites with sulphur fumes. This method is of use only when the house can be made absolutely tight. For an open house, hot kerosene emulsion, or even hot soap-suds from the washing, with a quantity of coarse salt dissolved in it, will kill the mites wherever it reaches them.

There are several varieties of lice which attack poultry. They subsist mainly on the feathers, and perhaps on the epidermic scales. They are found largely on the head and neck, under the wings, and about the vent, and, when present in large numbers, they cause the fowls much discomfort. Persian insect powder (pyrethrum), powdered sulphur, and some of the various preparations on the market, such as the louse powders, are good in combating these pests. The hens can be dusted with one of these powders after they have gone to roost. Have the powder in a box with a perforated cover, grasp the fowl by the legs, and shake the powder well among the feathers. Dust at least three times at intervals of about a week, in order to catch the lice that hatch out after the first dusting.

The mites subsist on the blood of the fowls, and are not usually found on the bodies of the bird except when at roost or on the nest. During the day they inhabit cracks and crevices of the walls, roosts and nests. Sitting hens are often so annoyed that they are compelled to leave the nests in order to relieve themselves of these parasites. The free use of kerosene about the nests and perches is useful in fighting mites. The walls of the house may be sprayed with kerosene, the operation being repeated every three or four days for two weeks. Insect powders are of little avail.

The following method has proved excellent in ridding houses of mites and lice when the weather conditions are such as to permit the birds being kept outside the house for five or six hours: Close all the doors and windows, and see that there are no cracks or any other openings to admit air. Get an iron vessel and set it on gravel or sand near the centre of the house; place in the vessel a handful of shavings or straw saturated with kerosene, and on these sprinkle sulphur at the rate of about one pound to every ninety or one hundred square feet of floor space. Instead of using the shavings and kerosene, the sulphur can be saturated with wood alcohol. When everything else is in readiness, light the material and hastily leave the house. In case any anxiety is felt about fire, a glance through a window will show whether everything is all right. There is very little danger of fire when proper precautions have been taken to have plenty of soil beneath the vessel. Allow the house to remain closed for three or four hours, at the end of which time one can safely conclude that there are no living beings inside. Now throw all the doors and windows wide open, so as to drive out the sulphur fumes thoroughly, and then the fowls may be allowed to enter. Let them in one by one, and as each enters catch it and dust it well with insect powder, which will destroy the lice on the birds. Tobacco dust is also good to use instead of insect powder. The birds and house have now been freed from vermin for the present, but the eggs of the insects have not been destroyed, and in a week another swarm will be hatched out. Therefore, it will be necessary to repeat the operation once or twice before the pests are exterminated. After this, care should be used to see that no strange fowl is admitted to the house or yard without having been thoroughly rid of lice, for one lousy hen will contaminate all the rest.

ORIGIN OF RHODE ISLAND REDS

The Rhode Island Red is a fowl that has been produced by several farmers in and about Little Compton, Rhode Island. This community is largely engaged in the production of eggs for market. Rhode Island Red is the fowl kept by nearly all of them, but you occasionally see a few Light Brahmas and Barred Plymouth Rocks, and we are told that at one time you could see some R. C. Brown Leghorns. All these varieties, and more, have been used in making the Rhode Island Reds. Some Red Malays are said to be chiefly responsible for the color of this breed. Years ago these males were introduced and crossed on different birds in this vicinity. The poultry farmers took a fancy to the red color, and always bred from red males. Whenever they introduced a cross, they always saved the red males from this cross and bred them. In time, the breed established had this red color, no matter whether the foreign blood introduced had been Light Brahma or Barred Plymouth Rock; but whatever it had been, the red always predominated, and these poultry-raisers always clung to it. It should be borne in mind that this was years ago—twenty, thirty, or, in some cases, even fifty years ago. The introduction of the R. C. Brown Leghorn blood is said by many to be responsible for the rose-comb variety. The fact that these farmers were not as particular in the selection of the females as they were in the selection of the males, is undoubtedly what has caused this breed not to breed as true as others, until possibly very recently.

POULTRY NOTES

As in all other businesses, management counts for most in the production of poultry. The ration may be ever so perfect, the battle with the pests and diseases may be ever so effective, but without management profits will be turned into losses every time.

An old poultryman says: "Very few men have it in them to start out with 3,000 or 4,000 hens and make a success of it. Better leave the thousand off and start with three or four, and work in gradually. Trying to step from the bottom of the mountain to the top in one grand leap is nice on paper, but when it gets right down to business there are lots of things a man needs to learn, even about so humble a thing as a hen."

Remember that this is the time when lice eggs hatch as well as the hen's eggs. Provide the birds, especially the setting hen, with a box filled with dust and lice killers, in which the dust bath may be taken at will.

There are many outlets for the egg besides the consumer's table. It takes over a million dozen per year in the manufacture of calico.

The lazy man should never engage in the poultry business. Poultry raising requires more hard and continuous work per dollar of profit than any other division of the farm.

THE APIARY

A DOMINIE AND HIS BEES

AS opportunity presented itself, sundry expeditions on a bicycle were made into the surrounding country, and, after a few such trips, a farmer was found who had nine hives of bees, fearfully neglected, in hives that were falling apart, which he was willing to sell for three dollars for the lot.

It did not take the Dominie a minute to close the deal—in fact, he would have paid ten times that amount, so thoroughly infected was he with the "fever."

The next day found him driving out to the "bee farm" in a covered wagon, filled with straw and a dozen feed bags, which were to be tried over the bee-hives to confine their inmates.

Being then a novice, the Dominie was fearfully stung while fixing them, and, as a result, nearly lost his enthusiasm over them; but lest he should be made the butt of jokes by his parishioners, who knew by this time how deeply interested he had become, he determined to stick to his "new love," though they had, with their stings, tried him so outrageously.

"Do you ever get stung by them now?" I asked. "Oh yes," he replied, "there is hardly a day I work among them but what I am stung from ten to twenty times, especially if I am in a hurry and am a little careless in the matter of jarring their hives." "But," he added laughingly, "I would rather be stung a hundred times by the bees than to be stung in Wall street, for the effects would not be so disastrous and lasting."

The nine hives at last reached the yard back of the parsonage, and, after the bees were quieted down, were placed upon their stands, and the Dominie considered himself a fortunate man in their possession.

Being progressive, he soon saw that to be up-to-date it would be necessary for him to transfer them to modern hives, or, at least, to hives that did not have such a multitude of entrances. For, as he remarked, when he would be dodging them at one entrance they would come at him from another, so that, again and again, he had been compelled to betake himself to flight, much to the amusement of the neighbors.

At that time, the clergyman knew nothing about bee-supply houses where modern hives could be bought, so, with nothing else to guide him than an old copy of "Langstroth on the Honey Bee," he determined to make his hives.

Lumber was purchased from the general store, and any night, for a week, sawing and pounding could be heard in the parsonage, even into the "wee sma'" hours, until it was rumored that the Dominie was going to move, as the neighbors declared they heard him packing up.

After the first enthusiasm had worn off, however, all new hives were purchased; for the minister soon found it did not pay to make his hives, as apart from financial considerations, it often happened that when using the hammer he would hit the nails on his hands as frequently as the nails of the hive. As winter drew on, the bees, which had been purchased that fall, were packed for the winter and had soon ceased to fly.

"The long winter evenings," said Dr. Lyon, "were spent in devouring bee books and journals, a goodly number of which had been loaned me by friends, so that, with the coming of spring, I was a pretty good theoretical bee-keeper; but I found later that there was a whole lot to learn that was not in the books, especially on the subject of stings."

The bees were mostly hybrids, and, being of a vindictive temperament, he soon displaced the queens and introduced Italian ones to take their places, as these were far more gentle and transmitted their gentleness to their offspring. The queens were purchased of a reliable breeder and arrived in good order, through the mail, and in accordance with instructions were introduced with safety.

The hybrid colonies were first made queenless, and left in that condition for three days, so that a sense of their utter queenlessness would render them the more ready to accept the new one. After three days, the little queen cage, containing the queen and attendants, was hung between two frames of brood combs, and, by the time the bees in the hive had eaten all the candy that acted as a barrier between the new queen and liberty, they were ready to accept her, as by this time she was thoroughly impregnated with the odor of the colony.

Had she been released at once, she would have been destroyed; as the odor of the colony from which she had been sent would have betrayed her as a stranger. Two days later, the empty cage was removed and her majesty was found in full possession of her royal prerogatives, surrounded by a retinue of faithful attendants who had long since forgotten about their previous mother. In a few weeks the hybrid workers had all died off gradually of old age, and in their places were thousands of beautiful golden-colored Italians, the offspring of the queen that was safely introduced, and the colony was a pleasure to handle because of their gentleness.

Dr. Lyon always wears a veil when working among them, as he once had an experience in having his face badly strung on a Saturday afternoon, and only with difficulty was able to reduce the swelling in time to be presentable in the pulpit on Sunday morning. When opening a hive, he first sends a puff of smoke in at the entrance and then pounds upon the hive two or three times, which so thoroughly alarms the bees that they fill up with honey, and as a result their little abdomens become so distended that it is a physical impossibility for them to sting.

The "smoker" is a little tin box with bellows attached, the fuel used being planer shavings, and when the colony is being examined, they are given a whiff whenever they show the slightest indication of getting ready to sting. When a colony swarms, the smoker is never used on the swarm, as it is unnecessary, for every little bee has filled itself with honey before coming out, and thus is unable to sting, however much inclined they may be so to do.

After flying about for a few minutes, the swarm would usually cluster on the branch of a tree, in which case, all that the Dominie had to do was to cut off the branch and shake the swarm at the entrance of a new empty hive, which they very readily entered.

Sometimes it was not necessary for him to touch the swarm at all, and this was accomplished early in the season, by clipping the wings of every queen in the apiary so that when the swarm would emerge, the clipped queen, unable to join them, would be found hopping around in the grass in a mad endeavor to do so.

In such cases, he would simply pick her up, as queens seldom if ever sting, and carry her into the house, placing her under a tumbler until wanted, while making preparation to receive the swarm which would be sure to return, as under no circumstances will they go away without her, however long they may hang on a tree.

In describing his method, Dr. Lyon said: "The hive from which the swarm has emerged is carried to a new location, and in its place a new, empty one is put, and, after a while, the swarm, missing its queen, begins to return in large numbers to the spot on which stood the hive from which they sallied forth. When they have nearly all entered, I get the clipped queen and drop her at the entrance, she immediately entering the hive, and, as the swarm now has a new home with plenty of room, they settle down and go to work. In this manner they are hived without being handled.

"When the honey begins to come in, along the first week of May, supers, or extra hive bodies, are placed, one at a time, between the brood body and the lid, containing each twenty-four little wooden boxes with thin sheets of beeswax foundation secured in them, which the bees draw out and fill with honey.

"If the honey continues to come in, another super of boxes is added, being placed not on top of the first super, which is nearly full, but between it and the body of the hive, so that the bees having to pass through it to get up to the one they are completing are more inclined to work in it than if it were placed on top. Sometimes there are three and even four of these supers tiered one above the other, if the season is unusually favorable, and I have had some colonies gather as many as a hundred and twenty of these little boxes full, each one of which holds a comb weighing a pound.

"When the cells are sealed, the honey is ripe, and there is no advantage in leaving it on the hive, for, when this is done, the little bees discolor the snowy whiteness of the surface by constantly running over the combs; therefore, I remove combs at once, first sending clouds of smoke down through them to drive the bees down into the body of the hive. The surplus is usually taken off about the middle of July when the clover flow is about over. If there is a late fall flow in August and September, new supers are given, but as this honey is darker in color and not so delicately flavored as the clover, it is not so much desired, for table use.

"Along about the middle of September every colony is carefully looked over, to see that it has a vigorous queen, and if any of the colonies are short of stores for the winter, they are fed a syrup made of equal parts of sugar and warm water. About the first of October, an empty super is placed over each hive body and a burlap bag, filled with chaff, planer-shavings or other warm, absorbent material, is pressed down in it, the lid put on and the bees are fixed for winter, requiring no attention till the following spring.

"In the spring, about the middle of April, the hives are opened, and if any queen has died, she is replaced by one bought for the purpose; if any colony is short of stores it is fed about ten pounds of syrup at one time, and when the fruit blossoms are in bloom I put on the first super of little boxes for the flow."

With careful management, each hive will average a profit of about five dollars, and in a small apiary, such as Dr. Lyons owns, but a small amount of time is required, amounting to about one-half day a week.

As a form of recreation, Dr. Lyon considers that bee-keeping can hardly be over-estimated. Not only does it present new interests to the mind, but it also involves a certain amount of exercise which is of benefit to the man whose occupation naturally tends toward sedentary habits.

Some of his early experiences were a bit disconcerting, however, as in the case of a neighbor who was busily engaged in canning and preserving the fruits of her garden, when she was suddenly made aware of the presence of a small army of buzzing intruders, which made a vigorous attack on the sugar, and refused to be dissuaded by any remonstrances on the part of the lady. Indeed, the latter was not inclined to physical force, but registered a strenuous objection with the owner of the invading horde. The Dominie explained that the occurrence was not likely to be a usual one, but, in justice to the lady of the jam and preserves, could only offer to fit her windows with screens in order to prevent any possibility of his bees giving her further annoyance.

As a matter of fact, however, the bees cause very little trouble to the neighbors, and Dr. Lyon does not hesitate to say that any suburbanite with a fair-sized lot is perfectly safe in keeping a few colonies.

Almost any bright day in the summer the Dominie can be seen spending a few minutes lying in the grass, beside the entrance of a hive, watching the train of busy workers carrying in their precious freight; and though his little pets are decidedly profitable, yet the real motive that prompts him in keeping them is the love which he, as a student of nature, feels for them.—Rudolph R. Strong in Suburban Life.

AROUND THE FARM

PROPER TIME FOR CUTTING CLOVER

THEORETICALLY, the best time for cutting clover for hay is when the plants are in full bloom. If cut before bloom, the amount of water in the crop is so excessive that the process of haymaking is slow and unsatisfactory. If delayed until the heads are all brown, the conversion into hay is much simplified, for the plants have then parted with much of the water they carry while developing, and are consequently easily dried. But such hay has lost much of its valuable protein and carbohydrates. Practice and theory then, combine in setting the period when one third of the clover heads are turning brown, as the best, all factors considered, for haymaking.

Haymaking from clover has fallen into three lines, each of which has its advantages according to locality and weather conditions. Under the first system, the clover is mown as soon as the dew is off and by frequent teddings and turnings, aided by bright, hot sunshine, it is ready for raking in the afternoon and housing before five o'clock, at which time the gathering dew shuts off further operation. Under this system, the clover plant must be well ripened, indeed past it's time for hay, and the weather very favorable if good results are to be secured.

The second system differs from the first only in cutting the clover so late in the afternoon that the dew does not materially affect the plants because they have as yet wilted but little. The following day haymaking proceeds as rapidly as possible, the crop being placed under cover before nightfall.

Under the third system, clover is cut after the dew is off and remains without tedding until afternoon, when it is gathered into wind rows and from these into bunches or coils before the dew falls, which stand several days, undergoing a sweating process. After sweating, they are opened in flakes, which give off their moisture rapidly and the material is soon ready for the barn. Whichever system is adopted, too great care cannot be exercised in preserving the finer parts of the plant, which are liable to be wasted, leaving only the coarse, woody stems to be gathered. Under all systems of hay production, the clover plant should not be placed in the barn or stack when carrying external moisture, either dew or rain. This foreign moisture appears to be more detrimental in the curing of hay than the natural sap of the plant.